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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/356,148	07/19/1999	RAYMOND E. OZZIE	G0008/7004	7411

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EXAMINER

CHOUDHARY, ANITA

ART UNIT	PAPER NUMBER
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2153

DATE MAILED: 02/20/2004

14

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/356,148

Applicant(s)

OZZIE ET AL.

Examiner

Anita Choudhary

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 35-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-15 and 35-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 July 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The amendment filed on December 1, 2003 under 37 CFR 1.312 has been entered.

Claims 1, 2, 7, 8, 11, 12, 14, and 15 have been amended and are presented for further examination. New claims 35-52 are added. Claim 16 has been cancelled. Claims 17-34 were previously withdrawn.

Claims 1-15 and 35-52 are presented.

Response to Arguments

Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

In response to Applicants arguments regarding Jain, Applicant's arguments have been fully considered but they are not persuasive. Applicant argues, "Jain discloses no mechanism for handling RPC that might arrive "out-of-order" after RPCs have been committed because changes have been made permanent at that point." This may be the teaching shown by Jain, however Jain still reads on the claimed invention. In particular, Jain shows that changes to be made to the data, for example widget ordering information, are in fact used to change the number of widgets ordered (inventory table) in the database. Even though this information change has not been committed or made permanent, it is still being used to display a current order and inventory status at the databases. As Jain shows, the change information is not made permanent so that a rollback feature can be employed. Similarly, Applicants invention does not make changes permanent, because to do so would not allow the "undoing" features shown in claim 1 line 19.

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In addition, after further consideration, it is apparent that Jain does show a procedure to handling transactions received out of order (conflict detection, col. 22 lines 6-13). Transactions are undone and execution of deferred calls' queue is contingent upon making deferring transactions (col. 22 lines 40-46).

A new rejection based on amended claims is presented below.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the data maintained by the remote network-capable device" in lines 23-24. There is insufficient antecedent basis for this limitation in the claim. The previous limitations of claim 1 do not point out a remote network-capable device for maintaining data.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 1-4, 12, 14, 15, 35-38, 40, 41, 44-47, 49 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jain et al. (US 5,806,075) in view of Mohan et al. (US 5,170,480).

In referring to claim 1, 12, 14, and 15, Jain shows a method for data replication between local and remote sites. Jain's disclosure shows a collaborative network with local site and multiple remote sites in a peer to peer environment enabling a local and remote network devices to cooperatively edit the same data (see Abstract, col. 1 lines 14-29, col. 5 lines 12-18). Jain shows:

- A memory (database, 120, 130) for storing a local copy of the data in accordance with a data model (fig. 1, col. 5 lines 24-26).
- A method for data-change engine (Transaction tables) coupled with the database, and responsive to data change requests/deltas (triggers, col. 12 lines 51-57) from both locally and remotely (plurality of computers) generated data change requests/deltas (col. 6 line 37-44), for controlling storage of data in the database in accordance with data model and making changes to the local copy of the data (col. 7 lines 29-53).
- A method for a dynamics manager (calls table, col. 8 lines 50-67), responsive to the data change request for controlling the engine and coordinating execution of the data change, wherein the dynamics manger, responsive to the data change request, can cause the making of selected data changes in an order (deferred calls, col. 7 lines 37-50, line 65-col. 8 line 5), and, responsive to a data change request being received out of the order (conflict detection, col. 22 lines 6-14), the undoing of the selected data changes to a point

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(original transaction) where a data change corresponding to the out of order data change request should have been made (col. 22 lines 40-46).

Although Jain shows substantial features of the claimed invention, Jain does not explicitly shows the remaking of the undone data changes in another order. Nonetheless this feature is well known in the art, and would have been an obvious modification to the system disclosed by Jain, as evidenced by Mohan.

In an analogous art, Mohan show two database systems, a first database and replica database system, wherein redo records are applied to the replica database, in order to maintain consistent copies of data between databases. In doing so, Mohan also shows a forward and backward recovery process. Undo records are logged in order to remake the undone data changes in another order so that the copy of data is consistent with the copy of data at the first database system (col. 3 lines 53-68, col. 5 lines 50- col. 6 line 13).

Given this feature, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system shown by Jain, by employing the feature taught by Mohan, in order to speed up application of queued records to a second database without locking up resources (col. 6 line 22-33).

In referring to claim 2, Mohan shows the making, undoing, and remaking of data changes in response to data change request priority scheme (undo, redo log records) (col. 5 line 50- col. 6 line 13).

In referring to claim 3, 40, and 49, Jain shows data change requests priority scheme including encoding sequence number (delivery order number) with data change request, and dynamics

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manager determining an order for making data changes specified by the data change request (col. 7 lines 53-64).

In referring to claim 4, Jain shows an identifier corresponding to characteristic of the network-capable device that generated the request (transaction_id, col. 7 lines 58-62).

In referring to claim 35 and 44, in addition to claims 1, 12, 14 and 15 rejected above, Jain shows: first and second received data change requests (calls) require that third data change have been made previously to the local data copy, determining an order of making the data changes as specified by the first and second change requests based on information contained in the data change requests (col. 8 lines 58-61, col. 20 line 1-6).

- Undoing changes to the data when first and second data change requests cannot be made (conflict) because other changes have already been made (col. 22 lines 1-14).
- Make a change (deferring transaction) to the local data copy as specified by the one data change request (original transaction, col. 22 lines 40-46).

Although Jain shows substantial features of the claimed invention, Jain does not explicitly shows the redoing of the undone data changes. Nonetheless this feature is well known in the art, and would have been an obvious modification to the system disclosed by Jain, as evidenced by Mohan.

In an analogous art, Mohan show two database systems, a first database and replica database system, wherein redo records are applied to the replica database, in order to maintain consistent copies of data between databases. In doing so, Mohan also shows a forward and backward recovery process. Undo records are logged in order to redo the undone data changes so that the

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copy of data is consistent with the copy of data at the first database system (col. 3 lines 53-68, col. 5 lines 50- col. 6 line 13).

Given this feature, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system shown by Jain, by employing the feature taught by Mohan, in order to speed up application of queued records to a second database without locking up resources (col. 6 line 22-33).

In referring to claim 36 and 45, Mohan shows placing data changes in a holding queue (undo/redo log) for subsequent processing (fig. 2, 70).

In referring to claim 37 and 46, Mohan shows when specified change requests can be made in the order determined by the data change requests, making the data changes specified by the change request in the order (col. 5 lines 17-30).

In referring to claim 38 and 47, Jain shows determining whether changes to a local data copy specified by data change request is queue can be made (col. 22 lines 6-14).

In referring to claim 41 and 50, Mohan shows placing information fore each change made in a data change log (undo log) and using it to undo changes (col. 6 lines 4-14).

Claims 5-11, 13, 39, 42, 43, 48, 51 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jain in view Mohan in further view of Niblett (US 5802322).

In referring to claim 5 and 6, Jain and Mohan shows substantial features of the claimed invention but does not show each originating database or “endpoint”, as claimed, having an endpoint number corresponding to the endpoint. Nonetheless this feature is well known in the

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art, and would have been an obvious modification to the system disclosed by Jain in view of Mohan as evidenced by Niblett.

In an analogous art, Niblett show a system for executing updates in a data conferencing network. Niblett shows:

- Identifier comprising an endpoint number corresponding to the endpoint that originated the data change request (col. 8 line 31-36).
- Request sequence numbers comprise endpoint relative sequence numbers, causing the data change request to be processed in an order dependent on the endpoint relative sequence number (col. 8 line 64- col. 9 line 8).

Given this feature, a person of ordinary skill in the art would have readily recognized the desirability and advantages of modifying the system disclosed by Jain by employing the features taught by Niblett in order to effect serialized updates more quickly to a plurality of users (see Niblett, col. 2 line 66- col. 3 line 16).

In referring to claim 7, 39, and 48, “dependency identifier” identifies the order of an update in relation to all other updates in the communications network. Niblett shows an update level is disclosed in each update request (col. 6 line 64- col. 7 line 17).

In referring to claim 8, 9, 13, 42, 43, 51, and 52, Niblett shows the update level specifies the update on which it depends by incrementing the update level by one. Therefore update is dependent on the update received just before it (col. 6 line 64- col. 7 line 46).

In referring to claim 10, Jain shows the execution of do, undo and redo operations with respect to data change request (col. 23 lines 40-46).

In referring to claim 11, see rejection for claim 6-10 disclosed above.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anita Choudhary whose telephone number is (703) 305-5268.

The examiner can normally be reached on 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton Burgess can be reached on (703) 305-4792. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AC
February 10, 2004


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